

CLAIMS:

1. A pulse modulation arrangement comprising a clock signal for determining a frequency of a pulse modulation signal and apparatus for determining a modulation parameter of the pulse modulation signal, the apparatus for determining a modulation parameter of the pulse modulation signal comprising a frequency controlled source responsive to a pulse modulation control signal.
2. A pulse modulation arrangement as claimed in claim 1 wherein the apparatus for determining a modulation parameter of the pulse modulation signal further comprises a counter for counting pulses produced by the frequency controlled source.
3. A pulse modulation arrangement as claimed in claim 2 wherein the counter is controllable for counting a controlled number of pulses produced by the frequency controlled source for determining the modulation parameter of the pulse modulation signal.
4. A pulse modulation arrangement as claimed in claim 3 wherein the pulse modulation control signal comprises a digital control signal.
5. A pulse modulation arrangement as claimed in claim 4 wherein the frequency controlled source comprises a plurality of binary weighted elements and a plurality of switches for selecting said binary weighted elements in dependence upon respective bits of said digital control signal.
6. A pulse modulation arrangement as claimed in claim 5 wherein the binary weighted elements comprise current sources.
7. A pulse modulation arrangement as claimed in claim 5 wherein the binary weighted elements comprise capacitors.

8. A pulse modulation arrangement as claimed in claim 5 wherein the binary weighted elements comprise delay elements.

9. A pulse modulation arrangement as claimed in claim 1 wherein the pulse modulation control signal comprises a digital control signal.

10. A pulse modulation arrangement as claimed in claim 9 wherein the frequency controlled source comprises a plurality of binary weighted elements and a plurality of switches for selecting said binary weighted elements in dependence upon respective bits of said digital control signal.

11. A pulse modulation arrangement as claimed in claim 10 wherein the binary weighted elements comprise current sources.

12. A pulse modulation arrangement as claimed in claim 10 wherein the binary weighted elements comprise capacitors.

13. A pulse modulation arrangement as claimed in claim 10 wherein the binary weighted elements comprise delay elements.

14. A pulse modulation arrangement as claimed in claim 1 wherein the frequency controlled source comprises at least one current source for providing a current with a magnitude controlled by a control signal.

15. A pulse modulation arrangement as claimed in claim 1 wherein the modulation parameter comprises a pulse width of the pulse modulation signal.

16. A pulse modulation arrangement as claimed in claim 1 wherein the modulation parameter comprises a phase shift of the pulse modulation signal.

17. In combination, a pulse modulation arrangement as claimed in claim 1 and a switch mode regulator controlled by

the pulse modulation arrangement, wherein a switching clock of the switch mode regulator is derived from the clock signal for determining a frequency of the pulse modulation signal, and the pulse modulation control signal comprises a feedback control
5 signal of the switch mode regulator.

18. The combination of claim 17 wherein the pulse modulation control signal further comprises a feed forward control signal dependent upon an input voltage of the switch mode regulator.

10 19. The combination of claim 18 wherein the feed forward control signal comprises a digital signal.

20. The combination of claim 18 wherein the feed forward control signal comprises an analog signal.